

1 Running Header: ATHLETE LEADERS EMOTIONS

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6 Gender Differences in the Perceived Impact that Athlete Leaders have on Team

7 Member Emotional States.

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## Abstract

Emotional contagion has been recognized as a variable influencing individual behaviour and team functioning. In particular, leaders within the team have been suggested to have a significant impact on their teammates through the expression of their emotions. As a result, the aim of this study was to provide greater insight into how different athlete leaders impact the emotional state of their team members, and whether gender differences existed in these relationships. Participants were 295 university student-athletes (200 male and 95 female) recruited from four universities in the UK. Data were collected in a two-step process. First, a voting/rating procedure was conducted within team to identify dominant task, motivational, social and external leaders. Then, participants completed the emotional contagion subscale of the Measure of Empathetic Tendency to rate the impact different athlete leaders had upon their emotional state. A MANOVA was conducted to explore gender differences in reported emotional susceptibility by leadership role. Subsequent ANOVAs highlighted significant differences between leadership role scores for female participants only. The results suggest that female athletes are more susceptible to emotional influence than male athletes. Furthermore, female athletes experienced a greater variation in the perceived emotional influence of different leadership roles in the team.

*Keywords: emotional contagion, gender, athlete leadership, leadership roles, peer leadership*

40     **Gender Differences in the Perceived Impact that Athlete Leaders have on Team**  
41                             **Member Emotional States.**

42                             **Introduction**

43             Emotional contagion, or the spread of emotions from one individual to  
44     another (Hatfield, Cacioppo, & Rapson, 1994), has been increasingly highlighted as  
45     a variable influencing individual behaviour and team functioning (Vijayalakshmi &  
46     Bhattachararyya, 2012). The transfer of positive emotions among adults in groups is  
47     an important phenomenon as it has been associated with beneficial group outcomes  
48     such as increased co-operation and decreased conflict (Barsade, 2002).

49             Leaders play a significant role in influencing their followers to achieve  
50     positive group outcomes (Mallett & Lara-Bercial, 2016). However, there is  
51     surprisingly little literature examining a leader's ability to influence the spread of  
52     emotions in groups, especially given the emotional links that form between leaders  
53     and their followers (For a review see, Clarkson, Wagstaff, Arthur, & Thelwell,  
54     2019).

55             Furthermore, very few studies to date have directly investigated emotional  
56     contagion in sport. Van Kleef, Cheshin, Koning, and Wolf (2019) conducted two  
57     field studies in competitive sports teams and reported that coaches' expressions of  
58     happiness and anger predicted players' experiences of both emotions. With respect to  
59     the emotional contagion amongst athletes, Totterdell (2000) reported that  
60     individuals' moods were transferred between teammates during a cricket match, with  
61     greater mood convergence in those with a high susceptibility to emotional contagion.  
62     In this study Totterdell collected mood and performance data from the players of two  
63     cricket teams during one match. The results highlighted a link between the happy  
64     mood of the team and subjective individual performance. Also, Moll, Jordet and

65 Pepping (2010), in a study of male soccer players' post-penalty emotional  
66 expressions, further established that this emotional transfer (emotional contagion)  
67 does not only occur between teammates but can also occur between opponents.  
68 Building upon these few studies, the current study sought to expand the literature  
69 examining emotional contagion in sport by drawing attention to emotional contagion  
70 between athlete leaders and their followers.

71        Though the concept of emotional contagion is an area of increasing interest in  
72 organisational settings (Barsade, Coutifaris, & Pillemer, 2018), the limited research  
73 in this area so far in the context of sport has examined the effect of a leader's ability  
74 to influence the spread of emotions from a charismatic and transformational  
75 theoretical framework, and crucially has only explored the formal (i.e., the coach)  
76 leader rather than leaders within the sports team (e.g., Johnson, 2008; Visser, van  
77 Knippenberg, van Kleef, & Wisse, 2013). Attention has also yet to be paid to the  
78 underlying affective mechanisms of how an athlete's leadership role (e.g. captain)  
79 influences group outcomes in teams. This mechanism is particularly important in  
80 sport (e.g., rugby, cricket) where the captain is a key decision maker on the pitch  
81 during the game, and seeks to influence a group of team members to achieve a  
82 common goal (Cotterill & Cheetham, 2017; Loughhead, Hardy, & Eys, 2006). There  
83 is also a general finding within the broader emotional contagion literature that gender  
84 differences exist in the degree to which individuals' emotional states are influenced  
85 by others (Doherty, Orimoto, Singelis, Hatfield, & Hebb, 1995); though this has not  
86 been explored within the context of sport. As a result, this study also explored  
87 potential gender differences in perceived emotional contagency as well.

88        In summary, this study represents an investigation of the emotional processes  
89 that in part explain the influence of athlete leadership on group outcomes in sports

90 teams. This study further builds upon research seeking to explore the role of athlete  
91 leaders and their impact on the team, and by drawing on these insights investigating  
92 how to maximise the leaders' influence (Cotterill & Cheetham, 2017; Cotterill &  
93 Fransen, 2016). As a result, the aims of the current study were to: (1) Explore  
94 differences in perceived emotional contagion between different leadership roles; (2)  
95 to explore potential gender differences in susceptibility to emotional contagion; and  
96 (3) to investigate whether different leadership roles had greater emotional influence  
97 within gender.

## 98 **Materials and Method**

99 Ethical approval for the study was gained via the University Ethics  
100 Committee at the Institution where the first two authors worked at the time of the  
101 study. All of the participants opted to take part in the study by giving their informed  
102 consent.

### 103 **Participants**

104 Participants were recruited from university sports teams across four  
105 institutions located in the South of England. In total, 295 university athletes  
106 participated in the study (i.e. 200 male and 95 female athletes). The male participants  
107 were recruited from three sports: rugby union (n=96), football (n=76), and hockey  
108 (n=28). The female participants were recruited from rugby union (n=46), netball  
109 (n=35), and hockey (n=14). For further details see table 1.

110 \*\*Table 1. Here!\*\*

### 111 **Measures**

112 **Identification of the athlete leaders.** The first step was to identify which  
113 athletes were perceived by their teammates as best leaders in each of the four key  
114 leadership roles that athletes can occupy. According to Fransen et al. (2014) these

115 leadership roles include the roles of task, motivational, social, and external leader  
116 (for further details see table 2). To identify the best leaders, we sought the views of  
117 the individual team members, an approach advocated by Fransen et al. (2015) in  
118 their leadership study that adopted a social network analysis approach.

119 \*\*Table 2 about here!\*\*

120 To identify the individuals within each specific team that team members felt  
121 best fulfilled each of the four specific leadership roles within their team. This was  
122 achieved following guidance outlined by Fransen et al. (2015) in the first step of  
123 their leadership study. To achieve this end, each player on a team rated each of their  
124 teammates with respect to their leadership quality for each specific leadership role.  
125 For each leadership role participants were presented with a clear description of the  
126 role at hand (as presented in Table 2.), then were asked to rate each teammate with  
127 respect to their leadership quality for this role on a 10-point Likert scale, ranging  
128 from 0 (*very poor leader*) to 4 (*very good leader*). The names of all of the members  
129 of the team were added to the questionnaire prior to participant completion. The  
130 likert scale scores by the team members were added together to give a final total for  
131 each member of the team rating the leadership ability across the four leadership  
132 roles. The individual in the team with the highest score for each role was classified  
133 as the designated role leader. Participants did not though rate themselves as leaders.

134 **Perceived Emotional Contagion.** The second step in this study then  
135 required each team member to complete the 7-item emotional contagion subscale of  
136 the Measure of Empathetic Tendency (MET: Mehrabian & Epstein, 1972) for each  
137 of the four assigned athlete leaders in their team. This measure was adopted as some  
138 concerns exist regarding the use of the Emotional Contagency Scale (ECS) in terms  
139 of its applicability to sport (i.e., the inappropriate nature of some items), and some

140 concerns over factor structure (e.g., Lundqvist, 2006). The MET scale was chosen as  
141 the nature of the items were appropriate for substituting the name of each athlete  
142 leader within each item. A sample item is “I become nervous if the {leader} becomes  
143 nervous”. Responses are measured using a 5-point Likert scale ranging from 1  
144 (*strongly disagree*) to 5 (*strongly agree*). The higher the emotional contagion scale  
145 score, the more susceptible to emotional contagion the individual is said to be to the  
146 athlete leader in question. The names of the specific individuals for each leadership  
147 role were included at the start of the second set of questionnaires given to  
148 participants. Participants within the team scored the questionnaire separately for each  
149 of the four individual athlete leaders. This second set of questionnaires was  
150 completed during a second data collection point.

## 151 **Data Analysis**

152 Data analysis took place in two parts. First, a multivariate analysis of  
153 variance (MANOVA) was performed to explore gender differences in emotional  
154 susceptibility for four separate types of leader: task, motivation, social and external.  
155 A bonferroni adjustment was conducted dividing the original alpha level (0.05) by  
156 the number of dependent variables (4) to produce a revised alpha level of 0.0125.

157 The second step in the data analysis process explored the within-gender  
158 differences in emotional susceptibility across the four different leadership roles. To  
159 achieve this outcome a one-way between groups analysis of variance (ANOVA) was  
160 conducted for motivation, task, social and external leadership scores for each gender  
161 type.

## 162 **Results**

163 The results section is split into three specific parts. The first focuses on the  
164 impact of athlete leaders on the emotional state of team-members. The second

165 focuses on gender differences in the impact of athlete leader type on athlete  
166 emotional state. The third focuses on within gender differences between athlete  
167 leadership role.

#### 168 **Impact of athlete leaders on the emotional state of team-members**

169 Table 3 shows that the mean values for emotional contagion within the athlete  
170 population as a whole are relatively high for all four athlete leadership roles (task,  
171 motivational, external and social). These scores were recorded by participants when  
172 considering the impact that the individual role leaders in each team had in relation to  
173 emotional contagion. The mean scores for all four leadership roles are between 3.0 –  
174 3.2 on a scale of 0-4; which suggests that the athlete leaders within the sports teams  
175 in this study do exert a perceived impact upon the emotional state of the rest of the  
176 team-members.

177 \*\*Table 3. About here!\*\*

#### 178 **Gender differences in susceptibility to emotional influence**

179 Preliminary assumption testing was conducted to check for normality,  
180 linearity, univariate and multivariate outliers, homogeneity of variance-covariance  
181 matrices, and multicollinearity, with no serious violations noted. There was a  
182 statistically significant difference between males and females on the combined  
183 dependent variables ( $F(3,295) = 11.07, p < .05$ ; Wilks' Lambda = .87;  $\eta_p^2 = .13$ ).  
184 More specifically, data revealed that female athletes are more susceptible to  
185 emotional influence than their male colleagues are. Mean values for both male and  
186 female participants across the four leadership roles are presented in Table 4.

187 When the results for the dependent variables were considered separately,  
188 using a bonferroni adjusted alpha level of .0125, statistically significant differences  
189 were found between male and female scores for motivational leaders ( $F(1,293) =$



190 9.33,  $p = 0.002$ ;  $\eta_p^2 = .03$ ); social leaders ( $F(1,293) = 6.30, p = 0.01$ ;  $\eta_p^2 = .02$ ); and  
191 external leaders ( $F(1,293) = 6.73, p = 0.01$ ;  $\eta_p^2 = .02$ ). There was no statistically  
192 significant difference found for task leaders.

193 \*\*Table 4 about here\*\*

#### 194 **Perceived differences in the degree of emotional influence between leadership** 195 **roles.**

196 The one-way ANOVA for male participants found no significant effect  
197 between leader type (Wilks' Lambda = 1.0  $F(1,200) = .28, p = .84$ , multivariate  $\eta_p^2 =$   
198  $<.01$ ). This suggests that that all leadership roles have a similar influence on male  
199 team-members.

200 There were significant differences reported following the one-way ANOVA  
201 for female participants [Wilks' Lambda = .735,  $F(1-95) = 11.04, p < 0.05$ , multivariate  
202  $\eta_p^2 = .265$ ]. This finding suggests that there are differences in the impact that different  
203 leadership roles can have upon the emotional state of female team-members.

#### 204 **Discussion**

205 The aims of the current study were to: (1) Explore differences in perceived  
206 emotional contagion between different leadership roles; (2) to explore potential  
207 gender differences in susceptibility to emotional contagion; and (3) to investigate  
208 whether different leadership roles had greater emotional influence within gender.  
209 Athletes in the current study reported being susceptible to the emotions of their  
210 identified athlete leaders, showcasing the important role that athlete leaders have on  
211 the emotions of their teammates.

212 The results in the current study also highlighted significant differences  
213 between male and female participants in the perceived emotional contagion for  
214 social, motivation, and external leaders. These results suggest that for these three

215 types of athlete leaders, female athletes appeared to have a higher susceptibility to  
216 emotional contagion than their male counterparts did. This finding is similar to the  
217 few studies that have previously explored gender differences in emotional expression  
218 and transfer. There is some existing research that suggests that females can be  
219 influenced more emotionally by the behaviour of others (e.g., Sonnby-Borgstrom &  
220 Svensson, 2008). Indeed, gender differences have been highlighted more broadly in  
221 relation to emotional contagion, with women reported to be more susceptible to  
222 emotional contagion than men (Doherty et al., 1995). This finding is supported by  
223 recent experimental and facial reactivity research in psychology, where gender  
224 differences in the expression of emotions during social interactions (*expresser* side)  
225 have highlighted a female susceptibility to emotional expressions (Wiggert, Wihelm,  
226 Derntl, & Blechert, 2015). It is also interesting to note that women also rate  
227 themselves as emotionally more expressive than males (Simon & NARTH, 2004).

228         The current study is, to our knowledge, the first to explore how athlete  
229 leaders affect the emotional state of team-members, and differences that exist  
230 between different leadership roles. The study is also the first to analyze these gender  
231 differences in the context of sport, and the first time that the ability of the leader to  
232 impact upon the emotions of their followers has been explored in a sporting context.  
233 One of the reasons articulated more broadly within the psychology literature  
234 regarding this increased contagency for females relates to greater emotional  
235 awareness, often referred to as emotional intelligence (Sánchez-Núñez et al., 2008);  
236 with women reported to pay more attention to the emotions of others, which in turn  
237 increased their emotional susceptibility (Hatfield, Bensman, Thornton, & Rapson,  
238 2014). The type of emotional contagion that takes place could also be crucial. It has  
239 been suggested that increased susceptibility to negative emotions can have a

240 damaging impact upon individual team members and the team collectively.  
241 However, increased susceptibility to positive emotions has been reported to have a  
242 positive impact upon cooperativeness, conflict, and perceptions of task performance  
243 (Barsade, 2002). Positive emotion contagion has also been linked to enhanced team  
244 effectiveness (Vijayalakshmi & Bhattacharyya, 2012). This suggests that future  
245 research within the domain of sport should seek to explore emotional contagion in  
246 greater detail and seek to explore the impact of different types (e.g., positive and  
247 negative) of emotions can have regarding emotional influence.

248         It is also important to note that the current study highlights a link between the  
249 susceptibility of individual members to the emotions of the individuals in specific  
250 leadership roles. This link might reflect a tendency for female team-members to be  
251 influenced more by their leaders compared to male athletes. It could however, also  
252 be true that athlete leaders in female sports teams are more emotionally expressive  
253 (Tamminen & Bennett, 2017) and better transmitters of emotion, so it is the sender  
254 rather than the receiver of the emotion-inducing messages that is the real point of  
255 difference. This aspect of the leader-follower relationship was not explored in the  
256 current study. Future research though could seek to explore both athlete emotional  
257 susceptibility and leader emotional influence ability (Cheng, Yen & Chen, 2012).  
258 Especially as there is evidence to suggest that the greater the congruence between a  
259 sender's and receiver's affective states, the greater the contagion effect (Clarkson et  
260 al., 2019).

261         One limitation of the current study was the imbalance in the number of male  
262 versus female participants. It proved to be more difficult to recruit female university  
263 sports teams compared with male teams, but these differences could have impacted  
264 upon the observed results and outcomes. It could also be argued that this fact also

265 shows the strength of the results, that significant differences were found despite  
266 more male participants than female. Also, the current study focused on emotional  
267 contagion, but this was only at a global emotional level. It would be interesting to  
268 explore differences in positive and negative emotional contagion, but at present there  
269 is not a validated tool appropriate for the sporting context that differentiates between  
270 different types of emotions.

271 Future research should look to explore the impact of athlete leader emotions  
272 at different levels of performance and professional sport status to see if there are  
273 differences in the perceived impact of different types of athlete leader on team  
274 member emotional state. As the participants in the current study were university  
275 students, where there is often a higher turnover of players, it would be worth  
276 exploring non student-athlete teams as well. There is also a need to explore whether  
277 different athlete leadership roles have the same impact when explored within  
278 different cultural contexts, especially as cross-cultural differences in contagion have  
279 been highlighted in organizational contexts (Hatfield, Rapson, & Narine, 2018). It  
280 would also be interesting to see if gender differences in the impact of athlete leaders  
281 on emotional state are repeated in different samples at different levels. Another focus  
282 of future research could be to explore objective measures of emotionality and  
283 emotional contagion in team members rather than perceived impacts. Especially as  
284 there is evidence that suggests that gender stereotypes can bias participant self-  
285 reports (Brody & Hall, 2008). Finally, it is important to note that the study draws  
286 together emotions and leadership themes as recently advocated by authors including  
287 Humphreys, Birch, and Adams (2016).

288 **Conclusion**

289           The current study builds on a range of previous studies that have highlighted  
290   the impacts (both positive and negative) that leaders in teams can have upon  
291   teammates. This study though highlighted crucial gender differences in the impact  
292   that different types of leaders can have. These findings reinforce the importance of  
293   getting the right people in the right leadership positions in the team, and also to  
294   ensure that there is the involvement of team members in the selection of relevant  
295   team leaders. Finally, the results from this study suggest that emotional contagion is  
296   one of the underlying affective mechanisms through which athlete leaders influence  
297   the team and team outcomes.

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*Table 1.*

*Demographic data for participants in the study (by sport)*

Sport	No of Teams	M <sub>age</sub>	Age Range (years)	Years playing sport	Years on team
Men					
Rugby Union (n=96)	7	22.17	18-28	11.89	2.10
Football (n=76)	6	19.85	18-25	11.57	1.87
Hockey (n=28)	1	19.90	18-22	7.72	1.91
Women					
Rugby Union (n=46)	3	19.93	18-24	2.10	1.43
Netball (n=35)	2	19.59	18-22	9.50	2.01
Hockey (n=14)	1	19.78	18-23	8.54	1.75

Table 2.

*The definition of the four leadership roles, as presented to the participants, based on the research of Fransen et al. (2014).*

Leadership role	Definition
Task leader	A task leader is in charge on the field; this person helps the team to focus on our goals and helps in tactical decision-making. Furthermore the task leader gives his/her teammates tactical advice during the game and adjusts them if necessary.
Motivational leader	The motivational leader is the biggest motivator on the field; this person can encourage his/her teammates to go to any extreme; this leader also puts fresh heart into players who are discouraged. In short, this leader steers all the emotions on the field in the right direction in order to perform optimally as a team.
Social leader	The social leader has a leading role besides the field; this person promotes good relations within the team and cares for a good team atmosphere, e.g. in the dressing room, in the cafeteria or on social team activities. Furthermore, this leader helps to deal with conflicts between teammates besides the field. He/She is a good listener and is trusted by his/her teammates.
External leader	The external leader is the link between our team and the people outside; this leader is the representative of our team towards the club management. If communication is needed with media or sponsors, this person will take the lead. This leader will also communicate the guidelines of the club management to the team regarding club activities for sponsoring.

Table 3.

*Mean scores across leadership role for all participants (Total, male, and female).*

	Total		Male		Female	
	Mean	N	Mean	N	Mean	N
TASK	3.12	295	3.15	200	3.06	95
MOTIVATIONAL	3.24	295	3.19	200	3.34	95
SOCIAL	3.22	295	3.08	200	3.52	95
EXTERNAL	3.04	295	3.08	200	2.95	95

Table 4.

*Descriptive statistics for emotional susceptibility for task, motivation, social and external leaders*

	GENDER	Mean	Std. Deviation	N
TASK	MALE	3.14	.49	200
	FEMALE	3.09	.44	95
	Total	3.13	.48	295
MOTIVATIONAL	MALE*	3.15	.49	200
	FEMALE*	3.34	.53	95
	Total	3.21	.51	295
SOCIAL	MALE*	3.14	.49	200
	FEMALE*	3.30	.51	95
	Total	3.19	.50	295
EXTERNAL	MALE*	3.12	.52	200
	FEMALE*	2.95	.56	95
	Total	3.07	.51	295

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*\* Indicates dependent variables where significant differences were reported.*